

Water Quality Meeting, June 6-7, 2007

In Attendance: Bob Hoffman, Roy Irwin, John Roth, Mark Buktenica, Brian Rasmussen, Vicki Ozaki, Dave Anderson, Andrew Merton, Daniel Sarr, Sean Mohren, Bess Perry

Issues discussed:

- Bob: There are many streams in the KLMN parks where we don't have much information at all on their baseline conditions. The monitoring plan was envisioned to guide gathering this initial information rather than narrow it down to minimum detectable differences.
 - Roy stated that it is unusual not to have any information; data from nearby sources can be used for baseline. We should see who has the most data that we will be comparing to and use similar methods and measurements.
- The Water Resources Division pushes target populations and representation of sample. Lots of networks are having issues with this. The advice is to scale down the scope and refine target populations.
 - A target population is a subset of the sampling frame.
- About 2/3 of the funding is for out of compliance, 303D, and ultraprimitive areas. About 1/3 of the money is to future threats and general characteristics.
 - Daniel – Designate in sample frame which are degraded or ultraprimitive and then further allocate from there.
- Statistics on the strength of monitoring programs; why and why not certain set-ups would work, especially over time.
 - Debate on looking at the data solely on the network-level versus at the park level as well for defining target populations.
- All topics on agenda covered.

Issues where a consensus was reached:

- Sampling size.
 - Each park needs at least 25 sampling points.
 - If you need 25 sites, plan on doing at least 30.
 - Mark – It's OK to limit the number of streams at CRLA sampled if the number of sites on the remaining streams increases.
 - Brian – It's also OK to limit the number of streams if the remaining streams are very different. Then do only limited sampling in other streams to compare as reference checks at WHIS.
 - Daniel – Instrumentation could help increase sampling frequency.
- Park needs.
 - REDW would like information on anadromy.
 - WHIS would like information on seasonal variation and dissolved metals.
 - CRLA would like information yearly; doesn't want to go more than 3 yrs.
 - ORCA would like information above, inside, and below the cave.
 - The data have to have value to the parks; have to say something about the conditions at the park-level, not just the network-level.
- Use photodocumentation wherever possible.
- Use sond (sp?) technologies to increase sampling sites.
 - Need calibration often, need to figure out purchase and schedule.

Issues that still need resolution:

- Exactly how to stratify.
 - Suggestions: snowmelt vs. rainfall fed, elevation, accessibility, stream order, shade, stream bed composition.
 - Many of these won't be the same across parks.
 - REDW may want to stratify based on presence of salmonids. Roy doesn't see an issue with this narrowing down, if the target population is clearly decided and there are different protocols for the specifics.
 - Temporal and spatial scale.
 - One park at a time, 3 yr panel, 5 yr panel.
 - ORCA and WHIS like Alternative 2.
 - CRLA and REDW like Alternative 1.
 - Possible Alternative 3: take out a lot of the variables and parameters. These aren't too much money and can get easily, so cutting out may not be necessary.
 - Pair a field season: REDW and WHIS streams; LAVO, ORCA, and CRLA streams; LAVO and CRLA lakes.
 - Pair a low and high elevation park for field season: REDW, ORCA, and CRLA streams; WHIS and LAVO streams; CRLA and LAVO lakes.
 - Vicki – Monitor intensively for a while (15 yrs) and then start interval monitoring. (This was done initially with Redwood Creek and has proven very useful.)
 - Ask Mary Ann Madej about times and limitations on taking samples.
 - Define time windows more exactly, including diurnal time constraints (in SOPs).
- Measurements that can't be taken within the timeframe may need to be dropped.
- Parameters that contain "estimate" as method should be taken out.
 - Roy – take out ones that are qualitative and user-biased (e.g., large woody debris, embeddedness).
- SOP for accounting bias.
- Asking for EMAP sites to be randomly located in park.